AMENDMENT

In the Specification:

Please replace the paragraph beginning at line 28 on page 48, with the following rewritten paragraph:

For construction of the promoter-probe vector, the promoterless *cat* gene was cloned in the *E. coli / Propionibacterium* shuttle vector pBRESP36B2[29] by PCR, resulting in vector pB2/PoCAT. The upstream PCR primer included the sequence 5'-GGGATCCTCTAGAGCATGCAAGCTTCTCGAGAATCGATAGATCTCTAAGGAAGCT AAAATG-3' (SEQ ID No.9), in which the last three nucleotides indicate the start codon of the *cat* gene. This synthetically derived sequence includes a multi-cloning site (MCS) containing the restriction sites BamHI, XbaI, HindIII, SphI, XhoI, ClaI and BglII. The downstream PCR primer included a BamHI restriction site. After PCR amplification the *cat* gene was cloned as a BamHI fragment in the BglII site of the vector (BamHI and BglII sites not restored). Two orientations of the *cat* gene were obtained. The orientation in which the cat gene has the same orientation as the beta lactamase gene in the pBR322 segment was used in further experiments.

Please replace the paragraph beginning at line 30 on page 53, with the following rewritten paragraph:

A *Propionibacterium freudenreichii* gene coding for glutamate 1-semialdehyde aminomutase named hemL[46] (EMBL accession number D12643) was used. The coding region of this gene is followed by the transcriptional hemL terminator. A DNA fragment containing the coding region of the hemL gene and the hemL terminator was cloned in pBRESP36B2p16SH as described in the following steps. The DNA fragment was amplified by PCR from chromosomal DNA isolated from *P. freudenreichii* ATCC6207 using the following primers: 5'-CAgTAgATCT CgACAAggAggAACCCAtgAg-3' (SEQ ID No.10) and 5'- CgTAAgATCTCAgTTTCggACATggCAgTg-3' (SEQ ID No.11). Both primers

contain a BglII restriction site. The PCR fragment obtained was ligated into the vector pCR-Blunt II-TOPO (Invitrogen) to create pGBPHEL-1. After transformation of *E. coli* kanamycin resistant colonies were obtained. The constructs thus obtained were verified by restriction analysis and the DNA sequence of the fragment was verified through sequence analysis.

Please replace the paragraph beginning at line 19 on page 54, with the following rewritten paragraph:

A *P. freudenreichii* gene coding for uroporphyrinogen III methyltransferase named cobA (EMBL accession number U13043) was used[47]. In order to over-express the cobA gene in *Propionibacterium* the gene was placed behind the 16S rRNA promoter and in front of the hemL terminator present in pGBP01HEL-1 as described in the following steps. A DNA fragment containing the cobA coding region was amplified by PCR from chromosomal DNA isolated from *P. freudenreichii* ATCC6207 using the following primers: 5'-CACCACCAACATCgATgAggAAAC-3' (SEQ ID No.12) and 5'-TCCAATTgggACTCAgTggTCgCTg-3' (SEQ ID No.13). The first primer contains a ClaI and the second primer contains a MfeI restriction site. The PCR fragment obtained was ligated into the vector pCR-Blunt II-TOPO (Invitrogen). After transformation of *E. coli* kanamycin resistant colonies were obtained. The DNA sequence of the cloned fragment was verified through sequence analysis. The resulting construct was named pGBPCOB-1.

Please replace the paragraph beginning at line 1 on page 56, with the following rewritten paragraph:

In order to over-express the gene coding enzyme B (SEQ ID No.3) in *Propionibacterium* the gene was placed behind the 16S rRNA promoter and in front of the hemL terminator present in pGBP01HEL-1 as described in the following steps. A DNA fragment containing the coding region for B was amplified by PCR from chromosomal DNA isolated from P. freudenreichii ATCC6207 using the following primers: 5'-

CTgATATCAATTggAggACATCAgATgACCCgCATCgTC-3' (SEQ ID No.14) and 5'-CTgAATTCggCCACgTCAgATCgCgTCC-3' (SEQ ID No.15). The first primer contains an EcoRV and a MfeI restriction site and the second primer contains an EcoRI restriction site. The PCR fragment obtained was ligated into the vector pCR-Blunt II-TOPO (Invitrogen). After transformation of *E. coli* kanamycin resistant colonies were obtained. The DNA sequence of the cloned fragment was verified through sequence analysis. The resulting construct was named pGBPCOU-1.

Please replace the paragraph beginning at line 12 on page 57, with the following rewritten paragraph:

In order to over-express simultaneously the genes encoding enzymes B (SEQ ID No.3) and C (SEQ ID No.5) in Propionibacterium the genes were placed behind the 16S rRNA promoter and in front of the hemL terminator present in pGBP01HEL-1 as described in the following steps. The two genes are located next to each other on the P. freudenreichii genome and are part from the same operon. A DNA fragment containing both genes was amplified by PCR from chromosomal DNA isolated from P. freudenreichii ATCC6207 using the following primers: 5'- CTgATATCAATTggAggACATCAgATgACCCgCATCgTC-3' (SEQ ID No.16) and 5'-CTgAATTCCggCggCTCAggCgAACAATg-3' (SEQ ID No.17). The first primer contains an EcoRV and a MfeI restriction site and the second primer contains an EcoRI restriction site. The PCR fragment obtained was ligated into the vector pCR-Blunt II-TOPO (Invitrogen). After transformation of E. coli kanamycin resistant colonies were obtained. The DNA sequence of the cloned fragment was verified through sequence analysis. The resulting construct was named pGBPPOB-1.